

OG Technologies, Inc.

CLAIMS

What is claimed is:

1. A method, the Prescribed Method, for identifying the motion of a metal object at an elevated temperature using imaging technologies based on tracking the irregular and unique surface marks on the said metal object that the said surface marks are formed by the oxidation process on the surface of the said metal object;
the said tracking is accomplished by identifying the locations of the selected surface marks in different images that are taken at known different time instances;
the said measurement is accomplished by comparing the location differences and time differences of the selected surface marks in different images;
wherein the said method clocking may be used for the timing of image acquisition so that time-dependent measurements such as velocity of the said metal object can be obtained.
2. The tracking method in claim 1 can be gray-scale pattern match.
3. The tracking method in claim 1 can be contour-based pattern match.
4. The tracking method in claim 1 can be geometrical search.
5. The Prescribed Method can be implemented in software.

OG Technologies, Inc.

6. The Prescribed Method can be implemented in electronic hardware.

7. An optical system for movement measurement and position tracking of long, non-textured metal objects at an elevated temperature comprising:

5 an image capturing device for imaging the said object;

an image processing unit for processing the images captured from the said object;

wherein the said image processing unit processes the images based on the Prescribed Method.

10 8. An optical system as recited in claim 7, wherein the optical system includes a CCD camera.

9. An optical system as recited in claim 7, wherein the optical system includes a CMOS camera.